

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 27, 2023

**TO:** Timothy J. Dwyer, Acting Technical Director  
**FROM:** A. Boussouf and D. Gutowski, Resident Inspectors  
**SUBJECT:** Los Alamos Activity Report for the Week Ending October 27, 2023

**Emergency Management:** On Tuesday, Triad personnel held a full-scale emergency exercise at the Los Alamos Neutron Science Center (LANSCE). The scenario started with an overhead crane dropping a load onto a shutter containing mercury contaminated with neutron activation products. This caused a large spill of mercury, and the adjacent workers were exposed. Soon after the spill, a large fire started, which provided energy to vaporize substantial amounts of mercury and form a significant plume. Exercise play included evacuations and shelters in place at LANSCE as well as a fire department and hazardous materials team response. N3B personnel also played in a limited capacity with a simulated evacuation of workers in Technical Area 21 and the canyons near LANSCE. Triad personnel are formally evaluating exercise performance with an emphasis on objectives related to corrective actions from previous exercises.

**Plutonium Facility–Radiological Control:** Last week, there were two skin contamination events in the same laboratory room. This room has a contamination control tent set up around a glovebox to support decontamination and decommissioning work. In the first event, a radiological control technician supporting a hot job in the tent surveyed out of the tent successfully but identified contamination on their hand during exit monitoring from the room at the hand and foot monitor. On the afternoon of the same day, a supervisor who was working outside of the same tent found contamination during a scan at the personnel contamination monitors on building exit after clearing the hand and foot monitors on room exit. Both individuals were successfully decontaminated, and there was no evidence of an airborne release in either event. While the exact source of the contamination for these events is indeterminate, facility personnel have several corrective actions to address potential causes. These include: modifying the process for doffing and surveying powered air purifying respirators, ensuring respirator storage cabinets are part of routine radiological monitoring, and evaluating personal protective equipment requirements for construction supervisors.

**Plutonium Facility–Safety Basis:** On Monday, the NNSA Field Office responded to Triad's request for concurrence on their latest revision of the atmospheric dispersion modeling protocol that will support the new safety basis for the Plutonium Facility (see 9/1/2023 report). The Field Office stated that Triad must revise the protocol within 45 days to address provided comments prior to obtaining concurrence. Key items the field office requested included: justification of the overall reduced conservatism in the proposed methodology from changes to plume meander, justification for not using the default dispersion parameter from DOE-STD-3009-2014, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis*, to calculate co-located worker dose consequences, and clarification on remote facilities using a distance greater than 100 m for co-located worker consequences.

**Transuranic Waste Facility (TWF):** Two Saturdays ago, TWF personnel completed all repairs to the damaged seismic power cutoff switch and performed the quarterly functional check from technical safety requirements surveillance (see 8/25/2023 report). Following the successful surveillance, the system was declared fully operable.